



Intisari

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan air kelapa dan lama masa inkubasi terhadap kadar hara pupuk organik cair kotoran kambing, serta interaksi keduanya. Rancangan percobaan yang digunakan dalam penelitian ini yaitu Rancangan Acak Lengkap (RAL) faktorial, terdiri dari dua faktor dan tiga ulangan ($5 \times 4 \times 3$). Faktor pertama adalah penambahan air kelapa yang terdiri dari lima aras, yaitu P0 (kontrol), P1 (EM4), P2 (EM4 + air kelapa 10% dari total pelarut), P3 (EM4 + air kelapa 20% dari total pelarut), dan P4 (EM4 + air kelapa 30% dari total pelarut). Faktor kedua adalah lamanya masa inkubasi, yaitu H0 (0 hari), H1 (12 hari), H2 (24 hari), dan H3 (36 hari). Pembuatan pupuk organik cair kotoran kambing dilakukan secara anaerob. Hasil penelitian menunjukkan penambahan air kelapa memberikan pengaruh nyata pelepasan gas CO_2 , kadar N-NO_3^- , Fe dan rasio C/N. Sedangkan lamanya masa inkubasi memiliki pengaruh nyata terhadap kadar N-NO_3^- , rasio C/N, Fe dan Cu. Interaksi antara penambahan air kelapa dan masa inkubasi berpengaruh nyata terhadap pH, DHL, Eh, TDS, N-total, N-NH_4^+ , P-total, K-total, C-organik, Mn, dan Zn. Hasil penelitian menunjukkan bahwa pembuatan pupuk organik cair kotoran kambing secara anaerob terbaik pada perlakuan P4H2 dengan penambahan air kelapa 30% dari total pelarut dengan masa inkubasi 24 hari. Sedangkan pada pertumbuhan tanaman dengan parameter tinggi tanaman seperti jumlah daun, indeks luas daun, panjang akar, bobot segar dan bobot kering tanaman, pupuk yang memberikan pengaruh terbaik adalah perlakuan P0H1 yakni tanpa penambahan EM4 dan air kelapa dengan masa inkubasi 12 hari.

Kata kunci: kotoran kambing, anaerob, air kelapa, masa inkubasi.



Abstract

This research aims to determine the effect of addition coconut water and the length incubation period to nutrient content of goat manure organic liquid fertilizer, and interaction of both. This experimental design that use in this research is Complete Randomized Design (CRD) factorial, each treatment contain two factors and repeated three times (5x4x3). The first factor was the addition of coconut water consisting of five levels, P0 (control), P1 (EM4), P2 (EM4 + coconut water 10% of total solvent), P3 (EM4 + coconut water 20% of total solvent), and P4 (EM4 + coconut water 30% of total solvent). The second factor is the length of the incubation period, H0 (0 days), H1 (12 days), H2 (24 days), and H3 (36 days). This research of goat manure organic liquid fertilizer set in anaerobic condition. The results showed that the effect of coconut water addition had a significant effect on the release of CO₂, N-NO₃⁻, Fe and C/N ratio. The incubation period had a significant effect on N-NO₃⁻, C/N ratio, Fe and Cu. The interaccation between coconut water addition and incubation period significantly affected potential of hydrogen (pH), electrical conductivity (EC), redox potential (Eh), total dissolved solids (TDS), total-N, N-NH₄⁺, total-P, total-K, C-organic, Mn, and Zn. The results showed that the best goat manure organic liquid fertilizer was made in the treatment is P4H2 with 30% addition of the total solvent with 24 days incubation period. While on plant growth with parameters such as plant height, total leaves, leaf area index, root length, fresh weight and dry weight of the plant, the best fertilizer was made in the treatment P0H1 without addition of EM4 and coconut water with 12 days incubation period.

Keyword: goat manure, anaerob, coconut water, incubation period.